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AGO D/A ltr, 29 Apr 1980

DEPARTMENT OF THE ARMY
OFFICE OF THE ADJUTANT GENERAL
WASHINGTON, D.C. 20310

IN REPLY REFER TO

AGDA (M)(20 Feb 70) FOR OT UT 694225

27 February 1970

SUBJECT: Operational Report - Lessons Learned, Headquarters, 520th Transportation Battalion, Period Ending 31 October 1969

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2. Information contained in this report is provided to insure appropriate benefits in the future from lessons learned during current operations and may be adapted for use in developing training material.

BY ORDER OF THE SECRETARY OF THE ARMY:

Kenneth G. Wickham

KENNETH G. WICKHAM
Major General, USA
The Adjutant General

1 Incl
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20

DEPARTMENT OF THE ARMY
HEADQUARTERS, 520TH TRANSPORTATION BATTALION (AM&S) (GS)
APO 96289

AVGFP-O 12 November 1969

SUBJECT: Operational Report of Lessons Learned, 520th Transportation Battalion for the Period Ending 31 October 1969 RCS CSFOR-65 (RI)

Commanding General
USARV
ATTN: AVHGC-DST
APO 96375

1. Operations: Significant Activities.

a. No major inspections from higher headquarters were conducted.

b. The battalion personnel section in-processed 28 officers and 251 enlisted personnel, and out-processed 21 officers and 543 enlisted personnel.

c. In addition to the assigned operational mission, the battalion units have participated in 332 hours of mandatory refresher training. Specialized training for selected personnel was accomplished through the Battalion Training Program and by the use of allocated Army Aviation Refresher Training School (AARTS) quotas. The battalion instruction included a block of 14 hours for all newly assigned personnel and was tailored to the local area and mission, plus the standard requirements of USARV Reg 350-1. Thirty-nine personnel attended AARTS courses at Vung Tau. Four technical supply supervisors attended the MCR 500 Course at Long Binh, and four pilots were transitioned through formal courses at Vung Tau (one in the OH-6, one in the AH-1G, and two in the CH-58). Four other pilots were transitioned in the OH-6 during a special course conducted within the battalion to meet a critical requirement for additional OH-6 pilots. Two pilots also attended a maintenance test pilot course at Vung Tau, which was conducted by the 765th Transportation Battalion.

d. The battalion presently supports a total of 1,035 aircraft and 3 Air Cushion Vehicles. This represents an increase of 4 aircraft over

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the previous quarter. A total of 1,271 aircraft were repaired and returned to users; 1,139 of these represented the DS workload of the battalion, while the remaining 132 were on GS workorders.

e. A total of 3,520 non-programed components were received, of which 3,497 were repaired and returned to the supply system or user. The Theater Aircraft Reparable Program (TARP) had an input of 2,064 items, of which 1,407 were returned to the supply system or user. This increase of 76.8 per cent over the previous quarter is attributed to a greater input of reparables and a greater availability of repair parts.

f. The Aircraft Processing Detachment (APD) received 272 aircraft for assembly and issue, and 234 for out-processing and retrograde. The total of 507 aircraft processed is a decrease of 76 aircraft over the previous quarter. There were 82 less inbound and 6 additional outbound; however, the processing of 49 CH-47 aircraft as compared to 28 during the previous quarter represents a slight increase in total workload. Noteworthy was the all time production record set in September by APD. Eleven separate monthly records were established to include the most aircraft processed (242) and the most CH-47s processed (19).

g. The Aviation Electronic Support Co., Central, repaired 14,590 avionic components. Additionally, 850 workorders were completed in conjunction with aircraft repair. A new general support mission for the repair of the CH-47 SAS (AN/ASW-24) and Speed Trim Amplifier was assigned during this period.

h. The three Direct Support Supply Activities (DSSAs) within the battalion received a total of 63,948 repair parts requests, of which 51,645 were Authorized Stockage List (ASL) requests. ASL issues totaled 30,222. A battalion supervised team accomplished a location survey and 100 per cent inventory at all three facilities during the period.

i. The battalion consolidated aircraft recovery team, which is under the supervision of the battalion operations section, accomplished 120 field extractions and 174 maintenance extractions. This total of 294 extractions represents a 31 per cent increase over the previous quarter. Of special significance was the lift of a complete CH-47 Chinook utilizing a "C" model Chinook on loan from the 169th Assault Support Helicopter Company. The total load amounted to 17,500 lbs and no problems were encountered. Prior to the arrival in-country of the "C" model Chinook, blades, engines, and armor plating had to be removed in order to lift the CH-47 with a CH-54 Flying Crane. Rigging gear is now being devised to enable the complete CH-47 to be extracted from a field position without prior removal of the blades. Such operations will eliminate the time and effort presently required to remove these components under difficulties encountered in the field.

j. The battalion daily helicopter courier flights transported 1,305 passengers and approximately 15 tons of priority cargo.

k. Total armament components repaired and returned to users or the supply system by the battalion shops totaled 1,032.

l. Special projects during the quarter included the modification of 73 T-63 engines to replace the torque meter helical gear shafts. Unmodified engines remaining in this program total 92.

m. At 0610 hours, 15 August 1969, an enemy 122 MM rocket landed approximately eight feet in front of an EM billet in the 20th Transportation Company located at Cu Chi. Eight enlisted men sustained injuries from shrapnel or debris from the building. The low casualty figure was attributed to oil drums filled with earth which formed the revetment surrounding the building.

n. Battalion Organization:

(1) During this reporting period, the battalion consisted of a Headquarters and Headquarters Company, the 20th Transportation Company (ADS), the 165th Transportation Company (ADS), the 605th Transportation Company (ADS), the 539th Transportation Company (GS); the 520th Aircraft Processing Detachment, and the Avionics Company, Central (Provisional). The organizational structure of reporting organizations is contained in Inclosures 1 through 4.

(2) The 357th Transportation Company was redesignated the 165th Transportation Company on 25 September 1969. All equipment was transferred to the 165th, with the mission and location of the unit remaining the same. All reservist personnel of the 357th were deployed as a unit to CONUS on 29 September 1969 for demobilization.

(3) On 25 October 1969, the 166th Aircraft Maintenance Detachment(SA) was placed under Operational Control of the battalion. This 34 man unit, which is augmented from battalion resources, will operate the 520th Battalion Aircraft Processing Detachment. The organizational structure of this unit is contained in Inclosure 5.

2. Lessons Learned: Commander's Observations, Evaluation, and Recommendations.

a. Personnel. None.

b. Intelligence. None.

c. Operations.

Incl

AVGFP-O 1 November 1969

SUBJECT: Operational Report of Lessons Learned, 520th Transportation Battalion for the Period Ending 31 October 1969, RCS CSFOR-65 (RI)

(1) UH-1 Main Rotor Blade Retention Pin.

(a) Observation: Mechanics have caused damage to both the main rotor blade retention pin and the blade root by using excessive force and improper procedures in the insertion and removal of the pin.

(b) Evaluation: During assembly, the difficulty of precise hole alignment and the close tolerance between the pin and the hole present a frustrating problem to the mechanic. A similar problem during removal operations is caused by the close tolerance of the fit and normal corrosion which is always present after an extended period of time. As a result, mechanics have resorted to using excessive force in hammering the pin in either operation, causing damage to the blade root during assembly and thread damage to the pin during disassembly. Through the use of a locally manufactured tool, this damage has been reduced. The tool can be manufactured from brass or a similar soft metal. It should be machined slightly smaller than the hole, shaped like the nose of a bullet at one end, and threaded to fit the lower end of the pin on the other end. After attaching the threaded end of the tool to the lower end of the pin, the tool is inserted into the hole during assembly operations so as to guide the alignment of the pin. Similarly during disassembly operations, the attachment of the tool protects the threads on the lower end of the pin from damage through hammering.

(c) Recommendation: That a similar type tool be manufactured and used by aviation maintenance units when inserting or removing the main rotor blade retention pin on the UH-1 helicopter.

(2) Pressurization of the AN/ARC-51BX UHF Radio.

(a) Observation: The extreme environmental factors of dust, moisture, and heat encountered in RVN have increased the failure rate of the AN/ARC-51BX.

(b) Evaluation: Although originally designed to be pressurized, these types of radios in RVN are not. This can be accomplished easily in-country by the addition of a rubber "O" ring which is available through normal supply channels. Subsequent pressurization to three pounds per square inch permits lower internal operating temperatures to be achieved. This factor, coupled with the virtual elimination of dust and moisture from the set, will extend the mean time between failures.

(c) Recommendations: That a program to pressurize all AN/ARC 51BX radios be initiated by Avionics Direct and General Support Units within RVN.

(3) Detonation of "Fugas" During Electrical Storms.

(a) Observation: "Fugas" filled drums placed at intervals along the perimeter have self-detonated on two occasions during electrical storms. This causes a breach of physical security, jeopardizes the defensive position of the perimeter, and conceivably could endanger friendly personnel who happen to be outside the perimeter during reduced alert conditions.

(b) Evaluation: The "Fugas", as constructed in this area, consists of three cans of thickener, incendiary oil, M-4 and 21 pounds of K917, FSN 1365-542-0426, mixed in one 55 gal drum of mo-gas, FSN 9130-160-1818. In the past, the drums were placed on top of the ground and command detonated by electric blasting caps wired to either claymore mines or a small charge of C-4. All of the above ground "Fugas" drums in this organization's section of the perimeter have been modified to bury the 55 gal drum completely at one end, with the long axis of the barrel on a 30° angle to the horizontal. The electrical blasting cap and C-4 charge are also buried (claymore mines are no longer utilized). To date, no self-detonation has been experienced using this design.

(c) Recommendation: "Fugas", when required for defensive positions, should be buried at one end, with only C-4 and an electrical blasting cap utilized as a detonationg device to prevent self-detonation during electrical storms.

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(4) VCO Card Failures Radio Set AN/ARC-114.

(a) Observation: A high failure rate has been experienced in the non-reparable, non-recoverable VCO card for the Radio Set AN/ARC-111 (SLAE).

(b) Evaluation: After this problem was identified, a number of cards were evacuated to Sacramento Army Depot for evaluation. At the depot, it was discovered that the cards contained microscopic droplets of water which could cause temporary failure, and that such a failure could be eliminated by a drying out process in the field. A "hot box" to accomplish this was constructed at this location and has proven highly successful. The box is constructed of sheetmetal, has a light bulb at both ends, and has a grill to hold the cards and to permit a free circulation of air around the cards.

(c) Recommendations: That all Avionics facilities construct a similiar box as described. That the Electronics Command develop and distribute a standard plan for drying cabinets to be manufactured locally.

(5) Technical Supply Operations.

(a) Observation: Experience indicates that as much as 60-75 per cent of the Direct Support Supply Activities' receipts, which arrive in consolidated shipping boxes, are dues-out to customers. The school solution

is to unpack one box at a time and place all of the items received in their respective warehouse locations. This procedure is time consuming, staggers arrival of DA Forms 1348-1 into the Stock Control Section throughout the day as each box is opened, and results in unnecessary movement and double-handling of due-out items.

(b) Evaluation: A system was developed whereby all consolidated boxes are immediately unpacked and held while the 1348-1s are processed through the Stock Control Section. This Holding Section consists of ten bins, numbered 0 through 9, and all consolidated boxes received are immediately unpacked and the items held in each bin according to the last digit of the Federal Stock Number. During the same period of time, all 1348-1s are delivered and processed through the Stock Control Section. Here the 1348-1s for items due-out are so marked, and the due-out cards are pulled. When the 1348-1s are returned to the Receiving Section, they are separated based on the last digit of the FSNs into the same ten categories as the bins. As each bin is unloaded, the item is either placed in a unit's receiving bin(in the case of dues-out), or placed in the normal warehouse location, according to the information annotated on the 1348-1s. This procedure eliminates placing dues-out in stock, double-handling of dues-out, speeds items to the customer receiving bins, and reduces the workload for warehouse personnel.

(c) Recommendation: That this procedure be included in future training manuals and be taught in the various supply courses in CONUS as an acceptable method under circumstances where multiple consolidated shipping boxes are received containing a large percentage of dues-out to customers.

(6) SPH-4 Flight Helmet.

(a) Observation: The new SPH-4 flight helmet has been in-country for approximately 45 days. No technical data or repair parts are available to support this item.

(b) Evaluation: A support "push" package is due-in for this item. As of this date, none has been received and no definite delivery date has been established. Until both the TM and support package arrive in-country, only limited maintenance can be performed.

(c) Recommendation: That applicable TMs and a minimum 60 day level of repair parts be issued before, or concurrently with, the arrival of a new item of equipment.

d. Organization. Direct Support Supply Activity (DSSA) Packing, Crating and Preservation Requirement.

(1) Observation: A Packing and Crating Section, with school trained specialists and adequate equipment, is required by unit DSSAs.

(2) A definite need exists for a Packing and Crating Section in the unit DSSA, staffed with school trained specialists who possess a fundamental knowledge in the basic requirements for aircraft component preservation, packaging, and crating. The less than ideal storage facilities in the DSSAs in RVN, coupled with an extremely moist and humid climate, necessitate immediate preservation and packaging of all retrograde parts. The same conditions also necessitate the requirement to repackage many serviceable parts, since the deterioration of crates and other packing materials is quite rapid. The inclusion of the latest equipment within such a section, to include a field type foam machine, would speed up the return of reparables when standard design containers and wooden crating materials are not available. The potential savings offered by such a section in the form of reduced manhours, faster turn-around of reparable components, and reduction in shipping and corrosion induced damages, should more than offset the costs associated with its staffing and equipping requirements.

(3) Recommendation: That in future TOE, a Packing and Crating Section be included in the Supply Platoon of the Transportation Company (ADS), TO&E 55-457.

e. Training. None.

f. Logistics. NCR 500 Program 122.

(1) Observation: The Requisitioning Objective (RO) as computed utilizing NCR 500 Program 122 does not agree with a manually computed RO for Authorized Stockage List (ASL) additions converted from fringe to ASL.

(2) Evaluation: Each Direct Support Supply Activity (DSSA) within the battalion compared a manually computed RO figure with the NCR 500 computed RO figures for 25 of the most recently converted ASL lines. Of the 75 lines recomputed, 29 had manually computed RO's smaller than the machine computed, 7 had manually computed RO's equal to the machine computed, and 39 had manually computed RO's smaller than the machine computed. No significant trend could be defined from these data; however, in 21 of 25 ledgers compared in one DSSA, the machine computed RO was equal to the total quantity demanded for the item during the computed period. Based on these data, the following flaws are considered possible in Program 122: (1) a missing card or process with Program 122, as received

(2) a basic flaw within the program itself; or, (3) incomplete instructions pertaining to a manual step which must be incorporated to convert demands of less than one year's duration to an average annual figure.

(3) Recommendation: That NCR 500 Program 122 be reviewed for a possible flaw.

g. Communications. None.

h. Material. Truck, Wrecker, 5 Ton, M543 Series.

(1) Observation: The 5 ton wrecker, M543 series, issued in lieu of the M246 series, cannot be utilized efficiently in aircraft maintenance operations.

(2) Evaluation: The M543, 5 ton wrecker, does not have the sufficient boom reach required to accomplish many essential aircraft maintenance tasks, such as: CH-47 series engine changes, removal of CH-47 series rotor heads and the loading of all types of aircraft for transport by "low boy" trailer.

(3) Recommendation: That the M-543 series wrecker not be issued as an authorized substitute item in lieu of the M-246 long boom series.

i. Other. None.

William E. Dasch

WILLIAM E. DASCH
LTC, TC
Commanding

5 Incl
Subordinate Unit
Organisational Charts

AVGF-B (12 Nov 69) 1st Ind LTC Shore/rap/MACV 3331
SUBJECT: Operational Report of Lessons Learned, 520th Transportation Battalion for the Period Ending 31 October 1969 RCS CSFOR-65 (R1)

DA, HEADQUARTERS, 34TH GENERAL SUPPORT GROUP (AM&S), APO 96309

TO: Commanding General, United States Army Vietnam, ATTN: AVHGC-DST, APO 96375

1. This Headquarters has reviewed the Operation Report-Lessons Learned for the quarterly period ending 31 October 1969 from Headquarters, 520th Transportation Battalion (AM&S) (GS).

2. Comments follow:

a. Reference Section II Lessons Learned, paragraph d. ORGANIZATION; concerning Direct Support Supply Activity (DSSA) Packing, Crating, and Preservation Requirement. All aircraft Direct Support Companies in the 34th General Support Group will be organized under MTOE 55-457G effective 1 December 1969. This problem should be alleviated as there are provisions in the storage and issue section of the supply platoon of this MTOE for five personnel with MOS 67V20 to provide this capability.

b. Reference page 7, paragraph f(2), concerning NCR 500 Program 122; this paragraph should read, "Of the 75 lines recomputed, 29 had manually computed RO's smaller than the machine computed, 7 had manually computed RO's equal to the machine computed, and 39 had manually computed RO's greater than the machine computed."

c. This Headquarters concurs with the remaining observations, evaluations and recommendations and has no additional comments.

FOR THE COMMANDER:

for THOMAS A. GRAY
MAJ, AGC
Adjutant

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AVHGC-DST (12 Nov 69) 2d Ind
SUBJECT: Operational Report of Lessons Learned, 520th Transportation Battalion for the Period Ending 31 October 1969 RCS CSFOR-65 (R2)

HEADQUARTERS, UNITED STATES ARMY, VIETNAM, APO San Francisco 96375

TO: Commander in Chief, United States Army, Pacific, ATTN: GPOP-DT, APO 96558

1. This headquarters has reviewed the Operational Report-Lessons Learned for the quarterly period ending 31 October 1969 from Headquarters, 520th Transportation Battalion (AM&S) (GS) and comments of indorsing headquarters.

2. Comments follow:

a. Reference item concerning "UH-1 Main Rotor Blade Retention Pin", page 4, paragraph 2c(1); concur. The 34th General Support Group will disseminate information on the manufacture of the special tool.

b. Reference item concerning "Pressurization of the AN/ARC-51 BX UHF Radio", page 4, paragraph 2c(2); nonconcur. Investigation reveals the 34th General Support Group has not experienced a higher failure rate of the AN/ARC-51 attributable to the lack of pressurization of the unit. A version of the AN/ARC-51 is operated at high altitudes and must be pressurized for operation in that environment.

c. Reference item concerning "Detonation of Fugas During Electrical Storms", page 4, paragraph 2c(3); concur. Fugas should be buried if used in a defensive position. Use of electrical shunts on command detonation wires of both Fugas and Claymore Mines during electrical storms is of great value to prevent self-detonation during electrical storms.

d. Reference item concerning "VCO Card Failures, Radio Set AN/ARC-114", page 5, paragraph 2c(4); concur. All general support avionics sites have constructed a similiar "hot box" to dry the VCO cards. An EIR should be submitted to the Electronics Command by the 34th General Support Group.

e. Reference item concerning "Technical Supply Operations", page 5, paragraph 2c(5); concur. This suggestion will be forwarded to the Logistics Doctrine Systems and Readiness Agency (LDSRA) as a portion of the USARV input to a current LDSRA Project to simplify the supply and maintenance system.

f. Reference item concerning "SPH-4 Flight Helmet", page 6, paragraph 2c(6); concur. Change 3 to TM 10-8415-202-13 includes the repair parts list for the SPH-4. USAMECOM message, AMSME-MTF, 042317Z Dec 69, states that this change will be available in limited quantities in Jan 70 with

22 JAN 70

AVHGC-DST (12 Nov 69) 2d Ind
SUBJECT: Operational Report of Lessons Learned, 520th Transportation Battalion for the Period Ending 31 October 1969 RCS CSFOR-65 (R2)

complete distribution in 120 days. USARV message, AVHAV-LOG, 190107Z Dec 69, subject: Helmet, Flyers, Protective SPH-4, Repair Parts, specifies the repair parts and supplies for the SPH-4.

g. Reference item concerning "NCR 500 program 122", page 8, paragraph 2f(3); concur. The question of a possible flaw in the program in question has been referred to the US Army Computer Systems Command which exercises Department of the Army directed responsibility for programing and program maintenance of the NCR 500 system.

h. Reference item concerning "Truck, Wrecker, 5 Ton, M543 Series", page 8, paragraph 2h; concur. The M543 series 5 ton wrecker is now a Closed Loop Support Program item, and will be issued only against TOE authorizations. The M543 and M246 series have both been issued against 5 ton wrecker requirements in the past because of shortages of both types and urgent requirements of units. Controls on issues will prevent "in lieu of" issues in the future.

FOR THE COMMANDER:

C. E. MICHELS
MAJ, AGC
Assistant Adjutant General

Cy furn:
520th Trans Bn
34th GS Gp

GPOP-DT (12 Nov 69) 3d Ind
SUBJECT: Operational Report of HQ, 520th Transportation Battalion (AMx/S) (GS) for Period Ending 31 October 1969, RCS CSFOR-65 (R2)

HQ, US Army, Pacific, APO San Francisco 96558 27 JAN 70

TO: Assistant Chief of Staff for Force Development, Department of the Army, Washington, D. C. 20310

This headquarters concurs in subject report as indorsed.

FOR THE COMMANDER IN CHIEF:

C. L. SHORTT
CPT, AGC
Asst AG

Incl 1

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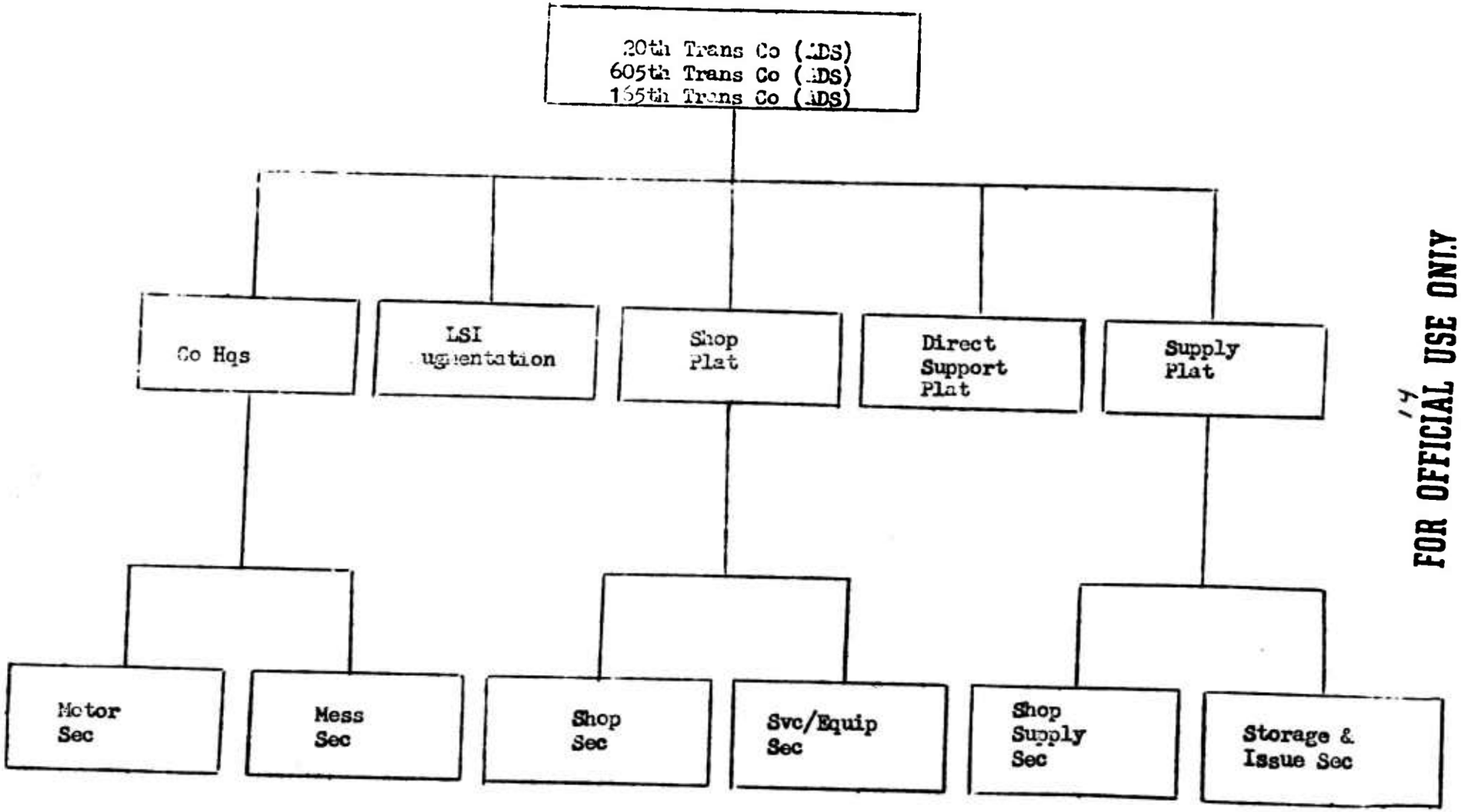

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CO, 520th Transportation Battalion

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